DOINGWHATWORKS

Slideshow

FULL DETAILS AND TRANSCRIPT

Messages on Effort and Persistence

Madison Elementary School, Washington • May 2008

Topic: National Math Panel: Critical Foundations for Algebra
Practice: Comprehensive Instruction

Highlights

- How modeling thinking encourages students to struggle with challenges
- The importance of providing thinking time for students
- How encouraging a variety of problem-solving methods supports persistence
- Messages to provide to parents about the importance of effort and persistence in mathematics

About the Site

Madison Elementary School

Spokane, WA

Demographics

76% White

6% Hispanic

5% Black

3% Asian

2% Native American

24% Free or Reduced-Price Lunch

3% English Language Learners
18% Special Education

Madison has put many practices and strategies in place to "leave nothing to chance" when it comes to teaching mathematics. The staff has deliberately reviewed all aspects of instruction and have well-developed approaches in the following areas:

- Philosophy of building conceptual understanding, problem solving, and fluency with facts;
- Using an open number line to teach fractions;
- Teachers' strategies for encouraging effort including messages to parents about the importance of effort and persistence;
- Assessment grids used to track performance on benchmark assessments to analyze individual needs and whole class needs for re-teaching; and
- Structured protocol for reviewing student work.

Full Transcript

Presentation Title: Messages on Effort and Persistence

Madison Elementary School, Spokane, WA

At Madison Elementary, staff conveys to students and to parents the message that effort—not just talent—counts in mathematics achievement. Principal Brent Perdue asks teachers to consider some strategies that they can use to help students focus on effort and persistence. The teachers want students to understand that their own effort and persistence are related to doing well in mathematics.

Slide 1: Modeling Thinking

Slide text: One strategy that teachers use in their classrooms is to model their own thinking while working on a problem, especially as they help a student who is struggling. They can help students to articulate their own thinking both for themselves and for others.

Audio: Strategies teachers use at Madison to encourage effort and persistence is that sense of, "How am I viewed as a learner, as the adult in the classroom?" That kids often believe that, "Well, the teacher knows everything." But if the teacher can model through their own thinking when things don't make sense to them, talk about how they grapple with certain problems—those little things really send a message to kids that, "If you're struggling here, that's what it's about." It's up to the teacher to model a sense of being perplexed when something doesn't make sense. Or maybe a child is sharing a strategy, and the teacher understands what they're doing but knows that most of the kids don't, the teacher can then model and

say, "Well tell me, that raises an interesting question. I'm not sure I'm quite under... Can you say that in a different way?" And then, help that student articulate their thinking in a way that other kids will learn.

Slide 2: Think Time

Slide text: Another strategy teachers use is to encourage "think time"—suggesting to students that it is not only okay, but smart to have to think about what you are trying to do in solving a problem.

Third grade teacher, Rita Hadley, explains how she uses think time.

Audio: In my classroom, we work at children developing persistence in sticking with a math problem. One of the ways that I start that is, when we introduce the math problem, I give them "think time," which is, "I just want you to think about the problem, want you to just take your time and let other children also gather their thoughts and think about what they think the solution might be." They just need time. They need time to kind of muddle through it, and time to just kind of work through it and look at different ways it might be solved. To let them know that it doesn't happen quickly. It isn't quick answers, but you stick with something in order to really get into the problem deeply.

Slide 3: Different Problem-Solving Methods

Slide text: Teachers have found that solving problems in different ways encourages students to focus more on effort and promotes persistence. Letting students make use of different methods allows them to choose what makes sense to them and grapple with what at first seems difficult or messy. The work here is from two students doing the calculation 52 + 49 in different ways.

Instructional assistant, Joanne Hagen, suggests using different ways to solve problems to develop persistence.

Audio: Another way to develop persistence with the kids, especially the primary kids, is letting them know early on that math can be messy. There's not just one right way to solve a problem. Once they get that sense that there's different strategies to use and different ways to solve problems, they can start developing that persistence and trying different things so that they can be successful.

Slide 4: Planning to Build Persistence

Slide text: Teachers plan the ways they can send messages to students about effort and persistence. They think about how to ask the right questions at the right time and give appropriate praise.

Audio: So the art we see with teachers, in building that effort and persistence, is to ask just the right question, or "Tell me more about that," or "Can you say that in a different way, so that your neighbors

over here can hear?" or asking a student, "Can someone tell me what Johnny or Susie just said in their own words?" A masterful teacher is able to ask just the right question, not to solve the problem for the child, but just to open the door so the child can then move ahead to the next door. So to me, mathematics is a series of doors that sometimes kids can get through on their own, sometimes there just needs to be a question asked just to help them get through the next one. We're really careful with praise so that it's not false. One of the things we know is we need to find the strengths in kids' work, and point that out to them and then figure out "What's the one thing I can do to help keep them moving to the next level?" So it might be a question, or it might be something that's supportive. "I notice that you did this on this problem, would that maybe work over here?" The issue not being, "You can do this. You're a good math student. You're smart. You can figure it out." We don't use those kinds of things with kids because if they don't feel they can live up to that expectation, it kind of puts an ending to their thinking.

Slide 5: Communicating to Parents

Slide text: Madison Elementary has done many things to communicate with parents, helping them understand that an increased emphasis on the importance of effort and persistence is related to performance in mathematics.

Audio: We've done many things to communicate with parents how important persistence and effort are in learning mathematics. A lot of it is trying to get them to realize that mathematics is about grappling with difficult problems. That if everything in mathematics were easy, there would be no thinking involved. What we do with our parents is to teach them ways they can be supportive of their kids. To ask questions, try not to step in and do the work for them, but have them see that there's some value in trying a different strategy, backing up, thinking about it a different way. If a child's stuck, take time, walk across the house and come back, look at it with a new pair of eyes. We try to include information in our, we have a *Monday Messenger* that goes home every week. We talk to parents in that. We've had parent nights. Those have been a huge success for us. Because parents, sometimes they don't know how to help their children at home. The other thing we've really combatted with parents is to really get them past the "badge of honor" that they might wear for being poor at mathematics. There's some badge of honor that comes with being a person that doesn't get math. And what we want is we want people to realize and for kids to see, "I can do this."

Slide 6: School Newsletter Example

Slide text: At Madison Elementary a weekly newsletter, Madison's Monday Messenger, goes home to parents and always has a message from the principal. Often the message talks about attitudes toward mathematics, the nature of mathematics learning, and the importance of effort and persistence. In this message, Principal Perdue challenges parents to consider their own perceptions of mathematics and how we learn.

A few editions of the Madison's Monday Messenger are provided in the sample materials.

Audio: Be positive! If you have a negative attitude about mathematics, chances are your child will too. Help your child have a "can do" attitude by praising your child's efforts as well as her accomplishments. Acknowledge the facts that mathematics can be challenging at times and that persistence and hard work are the keys to success. Relate mathematics learning to other endeavors that require hard work and persistence, such as playing a sport. Struggling at times in mathematics is normal and is actually necessary to, and valuable in, understanding mathematics.

Slide 7: Attitudes about Mathematics

Slide text: Another message highlights some research about how student's attitudes affect their performance and future opportunities. Listen to Principal Perdue read the message.

Audio: Negative attitudes about mathematics are learned, not inherited. A student with a productive attitude finds sense in mathematics, perceives it as both useful and worthwhile, believes that steady effort in learning mathematics pays off, and views him or herself as an effective learner and doer of mathematics. Generally, U.S. students are more likely to attribute success in mathematics problem solving to ability, rather than effort. East Asian children, on the other hand, perceive success as a function of effort, not ability. It is important for all adults to model perseverance in the face of challenging problems and to convey that mistakes and misconceptions are inevitable and provide necessary opportunities for learning.

Slide 8: Parents' Messages

Slide text: Parents especially value those messages that help them decide how and when to help their children in mathematics. Principal Perdue encourages parents to remember that grappling with a mathematics problem can deepen learning and build stamina. He suggests parents consider how quickly and in what ways they can intervene when a child is having difficulty.

Audio: We all want to help our children to succeed academically. Our notion of a caring adult is one who will lend a helping hand when a child struggles or doesn't understand. This should always be the case. What we might consider adjusting, however, is what our interventions look like and how quickly we intervene. A child learns early on whether a simple "I don't get it" will bring about all the adult assistance needed to help him or her get an answer with less effort. Letting children grapple with concepts that tax the brain improves the depth of learning and builds stamina for trying different approaches. None of us want kids who give up at the first sign of difficulty. There does exist a fine line between grappling with concepts, and frustrations that lead to a child shutting down. I encourage all of us to work to ensure students are given the opportunity to work through difficulties with the smallest amount of support needed.